

WHAT IS CLAIMED IS:

1. A solderability testing apparatus comprising:  
a sample parts holding means having a sample parts holding  
member for holding a sample;

5 an external force detection means for supporting said  
sample parts holding means;

a solder paste container for containing a solder paste  
which is internally added with a flux; and

a heating means for heating the solder paste;

10 wherein said apparatus has a flux wetting preventive layer  
at least on the surface of a sample holding portion of the  
sample parts holding member.

2. The solderability testing apparatus as claimed in Claim 1,  
15 wherein a material composing the flux wetting preventive  
layer has a contact angle  $\theta$  to flux of larger than  $90^\circ$ .

3. The solderability testing apparatus as claimed in Claim 2,  
wherein the material composing the flux wetting preventive  
20 layer is a fluorocarbon resin.

4. The solderability testing apparatus as claimed in Claim 2,  
wherein the material composing the flux wetting preventive  
layer is cermet or ceramic.

25 5. A solderability testing apparatus comprising:  
a sample parts holding means having a sample parts holding  
member for holding a sample;  
an external force detection means for supporting said  
30 sample parts holding means;  
a solder paste container for containing a solder paste  
which is internally added with a flux; and

a heating means for heating the solder paste;  
wherein at least a sample holding portion of the sample  
parts holding member is made of a material having a poor wetting  
balance in respect of the flux.

5

6. The solderability testing apparatus as claimed in Claim 5,  
wherein a material composing the sample holding portion of  
the sample parts holding member has a contact angle  $\theta$  to flux of  
larger than  $90^\circ$ .

10

7. The solderability testing apparatus as claimed in Claim 6,  
wherein the material composing the flux wetting preventive  
layer is a fluorocarbon resin.

15

8. The solderability testing apparatus as claimed in Claim 6,  
wherein the material composing the flux wetting preventive  
layer is cermet or ceramic.

20

9. A solderability testing method using a solderability  
testing apparatus, said apparatus comprising:

a sample parts holding means having a sample parts holding  
member for holding a sample;

an external force detection means for supporting said  
sample parts holding means;

25

a solder paste container for containing a solder paste  
which is internally added with a flux; and

a heating means for heating the solder paste;

said apparatus having a flux wetting preventive layer at  
least on the surface of a sample holding portion of the sample  
parts holding member;

wherein said method comprises a step of heating and  
melting the solder paste using a heating means while keeping a

part of a sample, which is held by a sample parts holding member, being dipped therein, and measuring time-dependent changes in the acting force effected between the molten solder paste and the sample using the external force detection means.

5

10. The solderability testing method as claimed in Claim 9, wherein a material composing the flux wetting preventive layer has a contact angle  $\theta$  to flux of larger than  $90^\circ$ .

10 11. The solderability testing method as claimed in Claim 10, wherein the material composing the flux wetting preventive layer is a fluorocarbon resin.

15 12. The solderability testing method as claimed in Claim 10, wherein the material composing the flux wetting preventive layer is cermet or ceramic.

13. A solderability testing method using a solderability testing apparatus, which apparatus comprising:  
20 a sample parts holding means having a sample parts holding member for holding a sample;  
an external force detection means for supporting said sample parts holding means;  
a solder paste container for containing a solder paste  
25 which is internally added with a flux; and  
a heating means for heating the solder paste;  
said apparatus having a flux wetting preventive layer at least on the surface of a sample holding portion of the sample parts holding member;  
30 said sample parts holding member having a sample holding portion which is made of a material having a poor wetting balance in respect of the flux.

wherein said method comprises a step of heating and melting the solder paste using a heating means while keeping a part of a sample, which is held by a sample parts holding member, being dipped therein, and measuring time-dependent changes in 5 the acting force effected between the molten solder paste and the sample using the external force detection means.

14. The solderability testing method as claimed in Claim 13, wherein a material composing the sample holding portion of 10 the sample parts holding member has a contact angle  $\theta$  to flux of larger than  $90^\circ$ .

15. The solderability testing method as claimed in Claim 14, wherein the material composing the flux wetting preventive 15 layer is a fluorocarbon resin.

16. The solderability testing method as claimed in Claim 14, wherein the material composing the flux wetting preventive layer is cermet or ceramic.